We Claim

1. A method of comparing the binding strengths of a plurality of different ligands to a receptor, the method comprising coating a plurality of micro-cantilever structures with the receptor, the coating being applied to at least a part of a surface of each micro-cantilever structure, contacting each micro-cantilever structure with a different ligand solution, and comparing the amounts by which the micro-cantilever structures deflect when contacted with the respective ligand solutions, in the absence of any vibration of the micro-cantilever structures.

2. A method as claimed in claim 1 wherein each micro-cantilever structure is of length less than 0.5 mm, of thickness less than 0.001 mm, and is fixed at one end.

3. A method as claimed in claim 1 wherein each micro-cantilever structure is of V shape, and the width of each arm is less than a fifth of its length.

4. A method as claimed in claim 3 wherein the organic receptor is coated on just one arm of each micro-cantilever structure, so that ligand-receptor binding causes twisting of the micro-cantilever structure.

5. A method as claimed in claim 1 wherein each micro-cantilever structure comprises two adjacent rectangular micro-cantilevers whose free ends are linked by a torsion bar.

6. A method as claimed in claim 1 wherein each micro-cantilever structure is coated with the receptor by means of an interposed bonding layer.

7. A method as claimed in claim 6 wherein the bonding layer comprises $R_3Si(CH_2)_nNH_2$, wherein R is O-alkyl, O-aryl, O-heterocyclic, alkyl, aryl, or heterocyclic, and n is zero or any integer.

8. A method as claimed in claim 1 wherein the receptor is treated with an initial ligand of moderate binding strength, such that only those ligands under test which bind more strongly cause deflection of the micro-cantilever structure.

9. A method as claimed in claim 1 comprising arranging an array of micro-cantilever structures so that each micro-cantilever structure is immersed in a respective vessel of water, and then adding solutions of the ligands to each of the vessels and observing the deflection of each of the micro-cantilever structures.

10. A method as claimed in claim 9 wherein the deflection is measured optically.

11. An apparatus for comparing the binding strengths of a plurality of different ligands to a receptor, the apparatus comprising a plurality of micro-cantilever structures coated with the receptor, the coating being applied to at least a part of a surface of each micro-cantilever structure, means for contacting each micro-cantilever structure with a different ligand solution, and means for comparing the amounts by which the micro-cantilever structures deflect when contacted with the respective ligand solutions, in the absence of any vibration of the micro-cantilever structures.

12. An apparatus as claimed in claim 11 wherein each

micro-cantilever structure is of length less than 0.5 mm, of thickness less than 0.001 mm, and is fixed at one end.

13. An apparatus as claimed in claim 11 wherein each micro-cantilever structure is of V shape, and the width of each arm is less than a fifth of its length.

14. An apparatus as claimed in claim 13 wherein the organic receptor is coated on just one arm of each micro-cantilever structure, so that ligand-receptor binding causes twisting of the micro-cantilever structure.

15. An apparatus as claimed in claim 11 wherein each micro-cantilever structure comprises two adjacent rectangular micro-cantilevers whose free ends are linked by a torsion bar.

16. An apparatus as claimed in claim 11 wherein each micro-cantilever structure incorporates an interposed bonding layer onto which the receptor is coated.

17. An apparatus as claimed in claim 16 wherein the bonding layer comprises $R_3Si(CH_2)_nNH_2$, wherein R is O-alkyl, O-aryl, O-heterocyclic, alkyl, aryl, or heterocyclic, and n is zero or any integer.

18 An apparatus as claimed in claim 11 comprising at least one light source arranged to generate a beam of light incident on at least one of the micro-cantilever structures, and at least one sensor to detect movement of the light beam reflected from the said micro-cantilever structure.

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